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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,541	10/17/2003	Takamasa Harada	2001JP309	1153

26289 7590 03/17/2006

AZ ELECTRONIC MATERIALS USA CORP.
ATTENTION: INDUSTRIAL PROPERTY DEPT.
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SOMERVILLE, NJ 08876

EXAMINER

ASSAF, FAYEZ G

ART UNIT PAPER NUMBER

2872

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/688,541	Applicant(s) HARADA, TAKAMASA	
	Examiner John Juba, Jr.	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Applicant's petition for acceptance of a late claim for priority has been forwarded to Petitions Branch and is awaiting decision.

Drawings

The replacement drawings filed May 4, 2005 are *not* acceptable because they are not labeled "Replacement Sheet" as required under 37 CFR 1.121(d). Although the rule may not be entirely clear, the "Replacement Sheet" label is applied to sheets bearing amended drawing figures, whereas the "New Sheet" label is reserved for newly presented additional drawing figures.

The substance of the proposed changes to Figures 3, 5, and 7 is approved. Formal replacement sheets are required. Table 1, and Figures 8(a)(b) are regarded as being part of Applicant's §1.132 declaration and are not to be published with any patent issuing from the present application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 –16 are rejected under 35 U.S.C. 103(a) as being unpatentable over NASHUA CORP (WO 98/39755 A2), in view of SAR, PLC (EP 0 294 122 A1), and further in view of Yano. NASHUA CORP disclose a light-polarizing sheet in contact with or bonded to a light scattering film (“diffusing” sheet or layer; Pg. 4, last para.) wherein the polarizer is a reflective polarizer which is a cholesteric filter combined with a quarter wave plate (Pg. 7, 1st para.; Pg. 14, 1st & 2nd paras.). Thus, NASHUA CORP disclose a reflective polarizer by which light is selectively P/S converted (see discussion, Pg. 15, 2nd para.). Thus, NASHUA CORP disclose the invention substantially as claimed, including the scattering film as having gradual index variations (e.g., Pg. 10, 1st whole para.) in the form of gradient index lenses (Pg. 20, last para). Notwithstanding the artisan’s reasonable inference that the gradient index lenses are columnar, NASHUA CORP do not expressly disclose the scattering film as comprising at least two phases of different refractive indices, wherein the phase having the greater refractive index has “pillar structures” extending in the thickness direction of the film wherein the refractive, or the transmittance of the film in the normal direction being at least 4%.

In the same field of endeavor, SAR, PLC disclose a light scatter film comprising oriented pillar structure (“tubular” gradient index microlenses; Pg. 3, line 9) wherein a “negligible” amount of light passes outside the viewing area (Pg. 3, lines 50 – 51). The pillar structures correspond to photopolymerized regions within the volume of the film, and having a refractive index that increases toward the center of the regions will an increased degree of photopolymerization. SAR, PLC refer to light trapping by total

internal reflection within these pillar structures. Thus, it will be appreciated that the pillar structures correspond to the phase having the higher refractive index. The second phase corresponds to the low index region of unpolymerized film.

It would have been obvious to one of ordinary skill to provide the light scattering film of NASHUA CORP with pillar structures of the type recited, since NASHUA CORP expressly suggest formation of the film by the method of SAR, PLC (Pg. 10, 1st para.; Pg. 20, last para.). Thus, NASHUA CORP and SAR, PLC disclose the invention substantially as claimed. However, these references do not particularly disclose a transmittance in the normal direction of at least 4%, as recited.

In the same field of invention, Yano discloses a light diffusing layer to be combined with polarizers and/or retarders (Col. 4, lines 40 – 45). Yano teaches that in order to have a viewable display, there must be an appropriate balance between the enlargement of the viewing angle and frontal brightness (Col. 3, lines 43- 57). In example 2, Yano discloses a direct transmission factor of 12% with high total transmission as giving a much improved brightness.

Barring any *unexpectedly* improved result, it appears that one of ordinary skill would have provided the film of NASHUA CORP (as modified by SAR, PLC) with a transmittance in the normal direction of at least 4% through only routine experimentation and optimization in achieving a viewable display, since Yano teaches that the degree of transmittance in the normal direction is a variable effecting the viewability of displays.

With regard to claims 3 and 4, SAR, PLC suggest that improvement can be achieved by providing the pillar structures so that alternate pillars are parallel to each

other and inclined with respect to the film's surface normal, so as to provide a three-dimensional (stereoscopic) viewing effect. However, it is believed that they also suggest that the pillars may be provided as parallel with each other and to the surface normal (Pg. 5, lines 6-10). In any event, it is clear by inspection of Figure 12 that at least some of the pillars will be parallel with each other and oriented in the surface normal direction.

With regard to claims 5, 9, and 13, SAR, PLC teach an index variation ($-n$) of about 0.02.

With regard to claims 7, 8, 11, 12, 15, and 16, the cholesteric reflective polarizing layer of NASHUA CORP is laminated with other films (Pg. 15, 2nd para.), and thus must be regarded as a "laminated type" of polarizer.

Response to Amendment

Applicant's amendment of claims 8, 12, and 16 is sufficient in overcoming the previous rejection thereof under 35 U.S.C. §112, second paragraph.

Applicant's remarks concerning the rejection of claims 1 and 3 –16 under 35 U.S.C. §103(a) as being unpatentable over NASHUA CORP (WO 98/39755 A2), in view of SAR, PLC (EP 0 294 122 A1) have been fully considered, but are not found entirely persuasive. However, the rejection has been withdrawn in favor of the rejection now entered above. Applicant's declaration under 37 CFR 1.132 has been fully considered, but is found to be of little probative value. In particular, none of the experiments discussed in Applicant's declaration appear to represent the particular combination of

elements proposed in the rejection. That is, there is no direct comparison between the performance of the claimed invention and the closest prior art. To be given substantial weight in the determination of obviousness or nonobviousness, evidence of secondary considerations must be relevant to the claimed invention as it relates to the closest prior art. The examiner can ascertain no nexus between the text results provided and the structure suggested by NASHUA CORP and SAR, PLC.

Applicant's test data only demonstrate that there is a threshold of light transmitted in the normal direction of the film that affects display viewability. Notwithstanding the rather subjective nature of display viewability, it is not clear from Applicant's test results, that a threshold of 4% would have been *unexpected*. Applicant merely alleges that the result would have been unexpected.

While it is true that NASHUA CORP do not disclose specific working example wherein the total film transmittance is given, their endeavor is clearly to achieve high film transmittance. However, it is clear from their discussion that they expect their recycling polarizer scheme to exhibit at least a 40% improvement over the (practical) 40% transmission of an absorptive (dichroic) polarizer^{note}. Thus, NASHUA CORP suggest that 56% of the light from the source would ultimately be polarized and passed through the film. How much of this polarized light is transmitted in the normal direction as opposed to other angles, remains unclear. However, as set forth above, Yano teaches that the degree of transmittance is a variable affecting display viewability. Thus, it appears that one of ordinary skill would have arrived at a workable range through only routine experimentation and optimization of this known result effective

variable. In so doing, one of ordinary skill would also have been expected to identify the ranges that don't work.

From Applicant's data, the examiner merely concludes that if the film transmittance in the normal direction is less than 4%, then the display will not be viewable and that if the film transmittance in the normal direction is not less than 4%, then the display will be viewable. Since the displays of the proposed combination are clearly intended to be viewable, it follows that the displays would *inherently* only be used with a film having a film transmittance in the normal direction that is not less than 4%, as recited.

In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

NOTE: [For example, they seek to provide a polarizing film having a greater transmittance than transmittance of a dichroic polarizer (50% in theory, but about 40% in practice) by use of a reflective polarizer and quarter-wave plate in a polarization recycling scheme. The polarization recycling scheme has a theoretical increase in transmittance of 100% over the dichroic (absorptive) case. They comment however that previous efforts (those of D.J. Broer, et al) of such a scheme, when used with a polarization scrambling diffuser, results in a great many passes of the recycled light through the system such that the repeated absorption losses result in a lower increase in transmittance (about 40% over the dichroic case, rather than the theoretical increase of 100%). NASHUA CORP teach that alternatively, the suggested diffuser (having the gradient index pillars) is *non*-polarization scrambling. This results in fewer passes of the light through the recycling system, such that a greater (better than 40%) increase in transmittance over that of a practical dichroic polarizer. Clearly what is suggested is a transmittance of at least 1.4 times 40%, or 56% of the light being polarized.]

Conclusion

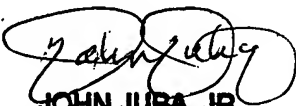
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (571) 272-2314. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Drew Dunn whose number is (571) 272-2312 and who can be reached on Mon.- Thu., 9 - 5.

The **new centralized fax phone number** for the organization where this application or proceeding is assigned is (571) 273-8300 for *all* communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2800.


JOHN JUBA, JR.
PRIMARY EXAMINER
Art Unit 2872

August 22, 2005